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EXAMINER

KAO, CHIH CHENG G

ART UNIT PAPER NUMBER

2882

DATE MAILED: 11/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/824,881

Applicant(s)

SAITOH ET AL.

Examiner

Chih-Cheng Glen Kao

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(Signature)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 14-19 and 21-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 14-19 and 21-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/1/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of the subject matter of Claims 1-6 and 14-19 in the reply filed on 9/1/05 is acknowledged.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "49" has been used to designate both a screw (fig. 8) and a part of a turntable (fig. 10).

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: (paragraph 134, line 1, "lid 34a"), (paragraph 134, line 3, "lid 34a"), (paragraph 135, line 1, "lid 34a"), (paragraph 135, line 4), (paragraph 135, line 5, "lid 34a"), and (paragraph 135, line 6, "lid 34").

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The specification is objected to because of the following informalities, which appear to be minor draft errors including drawing inconsistencies.

In the following format (location of objection; suggestion for correction if any), the following corrections may obviate their respective objections: (paragraph 67, "Figures 3 and 14"; replacing "14" with - 4-), (paragraph 79, lines 1-2, "mass measuring unit 14"; replacing "14" with - 4-), (paragraph 106, line 5, "upper chamber 29"; replacing "29" with - 42-), (paragraph 107, line 5, "filter 1"; replacing "1" with - 21-), (paragraph 108, line 1, "Figure 7"; replacing "7" with - 8-), (paragraph 110, line 7, "filter 1"; replacing "1" with - 21-), (paragraph 114, line 5, "filter unit mounting portion 29"; replacing "29" with - 25-), (paragraph 122, line 1, "filter unit 54"; replacing "54" with - 24-), (paragraph 124, line 2, "reinforcing layer 22"; replacing "22" with - 23-), (paragraph 124, line 6, "reinforcing layer

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22”; replacing “22” with - -23- -), (paragraph 124, lines 9-10, “reinforcing layer 22”; replacing “22” with - -23- -), (paragraph 124, line 13, “reinforcing layer 22”; replacing “22” with - -23- -), (paragraph 124, line 13, “collecting section 23”; replacing “23” with - -22- -), (paragraph 124, line 14, “collecting section 23”; replacing “23” with - -22- -), (paragraph 124, line 15, “reinforcing layer 22”; replacing “22” with - -23- -), (paragraph 128, line 5, “sampler 22”; replacing “22” with - -34- -), and (paragraph 133, line 1, “filter 1”; replacing “1” with - -21- -).

Appropriate correction is required.

Claim Objections

5. Claims 1, 3, 5, 6, 14, 17, 19, 20, 22, 25, and 26 are objected to because of the following informalities, which appear to be minor draft errors including grammatical and lack of antecedent basis problems.

In the following format (location of objection; suggestion for correction), the following corrections may obviate their respective objections: (claim 1, line 1, “analyzer comprises”; replacing “comprises” with - -comprising- -), (claim 1, line 3, “the mass”; deleting “the”), (claim 1, line 4, “the composition”; deleting “the”), (claim 1, line 5, “matter wherein the measurement”; inserting a comma after “matter”), (claim 3, lines 2-3, “the measuring spot”; changing the dependency of claim 3, from claim 1 to claim 2), (claim 3, line 3, “the X-rays”; changing the dependency of claim 3, from claim 1 to claim 2), (claim 5, line 3, “holders units, the holder units”; inserting - -and wherein- - after the comma), (claim 6, line 3, “a pressure loss method and a light scattering method”; inserting a comma after “a pressure loss method”), (claim 14, lines 1-2, “the mass”; deleting “the”), (claim 14, line 14, “composition analyzing unit and”; inserting a

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comma after “unit”), (claim 14, line 14, “transporting unit”; replacing “transport” with - - transporting- - in line 10 of claim 14), (claim 14, line 14, “unit wherein a plurality”; inserting a comma before “wherein”), (claim 17, line 2, “characteristic/”; replacing the forward slash with a period), (claim 19, line 2, “the same housing”; replacing “the” with - -a- -), (claim 19, lines 2-3, “the same location”; replacing “the” with - -a- -), (claim 20, lines 4-5, “particulate material, the filter member”; inserting - -wherein- - before “the filter member”), (claim 22, line 3, “polyester and polyamide”; inserting a comma after “polyester”), (claim 25, line 3, “polyester and polyamide”; inserting a comma after “polyester”), (claim 26, line 2, “a reinforcing layer and a”; inserting a comma after “layer”), (claim 26, line 4, “is subject to”; replacing “subject” with - -subjected- -), (claim 26, line 4, “the quantity”; deleting “the”), and (claim 26, lines 4-5, “the target material”; replacing “matter” with - -material- - in line 3 of claim 26).

For purposes of examination, the claims have been treated as such. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1, 2, 5, and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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7. Regarding claims 1, 5, and 14, the phrase "can be" in lines 5, 3, 15, respectively, renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

8. Regarding claim 2, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

The Examiner has examined the claims as best understood as follows.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-3, 5, 6, and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer (DE 4434222) in view of Volkwein et al. (US Patent 6401520) and Thomson et al. (US SIR H188).

10. Regarding claim 1, Fischer discloses a system comprising a collecting unit for collecting particulate matter (fig. 1, #17/1 and 17/2), a unit for measuring of the particulate matter (fig. 1, #19), and a unit for analyzing of the particulate matter (fig. 1, #19) wherein the measurement can be done in a sequential manner in the instrument (fig. 1).

However, Fischer fails to disclose measuring mass or analyzing composition.

Volkwein et al. teaches measuring mass (col. 1, lines 25-38). Thomson et al. teaches analyzing composition (fig. 1, #8).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the system of Fischer with the mass measuring of Volkwein et al., since one would be motivated to make such a modification for better monitoring analysis (col. 1, lines 15-38) as implied from Volkwein et al.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the system of Fischer with the composition analysis of Thomson et al., since one would be motivated to make such a modification for providing more data (col. 1, lines 20-22) as implied from Thomson et al.

11. Regarding claims 2 and 3, Fischer as modified above suggests a system as recited above.

However, Fischer fails to disclose wherein a composition analyzing unit is configured to analyze a composition of particulate matter by irradiating a measuring spot formed on a filter with X-rays, and wherein a collecting unit is configured to enable a sample gas to pass through a filter, thereby forming a measuring spot on a filter, and the filter is made of a material which substantially pass all of the X-rays.

Thomson et al. further teaches wherein a composition analyzing unit is configured to analyze a composition of particulate matter (fig. 1, #8 and 9) by irradiating a measuring spot formed on a filter (fig. 1, #3) with X-rays (fig. 1, #5), and wherein a collecting unit is configured to enable a sample gas (title) to pass through a filter (fig. 1, #3), thereby forming a measuring

spot on a filter (fig. 1, #3), and the filter is made of a material which substantially pass all of the X-rays (col. 4, lines 59-63).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further incorporate the system of Fischer with the composition analysis of Thomson et al., since one would be motivated to make such a modification for providing more data (col. 1, lines 20-22) as implied from Thomson et al.

12. Regarding claim 5, Fischer further discloses wherein the unit for collecting particulate matter includes a filter holding mechanism with a plurality of individual filter holder units (fig. 1, #17/1 and 17/2), and wherein the holder units (fig. 1, #17/1 and 17/2) can progressively and automatically position individual filters at a sample taking station which permits the sample gas to pass through selected filters (abstract).

13. Regarding claim 6, Fischer as modified above suggests a system as recited above.

However, Fischer fails to disclose wherein a mass measuring unit is configured to measure mass of particulate matter by using one of an X-ray absorption method, a pressure loss method, and a light scattering method.

Volkwein et al. further teaches wherein a mass measuring unit is configured to measure mass of particulate matter by using one of an X-ray absorption method, a pressure loss method, and a light scattering method (col. 1, lines 25-38).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further incorporate the system of Fischer as modified above with the

mass measuring unit of Volkwein et al., since one would be motivated to make such a modification for better monitoring analysis (col. 1, lines 15-38) as implied from Volkwein et al.

14. Regarding claim 14, Fischer as modified above suggests a system as recited above.

However, Fischer fails to disclose a controller unit.

Thomson et al. teaches a controller unit (fig. 1, #11).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further incorporate the system of Fischer as modified above with the controller unit of Thomson et al., since one would be motivated to make such a modification for better control (fig. 1, #11) as implied from Thomson et al.

15. Regarding claim 15, Fischer as modified above suggests a system as recited above.

However, Fischer fails to disclose wherein a source of filter members includes an elongated roll of filter material and a feeding reel unit which positions a predetermined length of filter material to operatively engage a sample fluid supplying unit.

Thomson et al. teaches wherein a source of filter members includes an elongated roll of filter material and a feeding reel unit which positions a predetermined length of filter material (fig. 1, #3) to operatively engage a sample fluid supplying unit (fig. 1, #1).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further incorporate the system of Fischer as modified above with the filter material of Thomson et al., since one would be motivated to make such a modification for more rapidly sensing elements (col. 1, lines 12-15) as implied from Thomson et al.

16. Regarding claim 16, Fischer further discloses wherein the source of filter members (fig. 1, #17/1 and 17/2) includes a filter holding mechanism which rotates (fig. 1, #9 and 12) a plurality of filter members (fig. 1, #17/1 and 17/2) to operatively engage the sample fluid supplying unit.

17. Claims 4, 17, 18, and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer, Volkwein et al., and Thomson et al. as applied to claims 3 and 14 above, and further in view of Imai et al. (JP 2002-239319).

Fischer as modified above suggests a system as recited above.

However, Fischer fails to disclose wherein a filter has an antistatic electricity characteristic, wherein the filter includes a porous layer made of a fluororesin, and a gas-permeable reinforcing layer, which is provided on a surface of the porous layer, wherein the reinforcing layer is made of a non-woven fabric which consists of any one or a plurality of materials selected from polyethylene, polyethyleneterephthalate, nylon, polyester, and polyamide, and wherein the filter includes a predetermined reference material other than a target material to be collected.

Imai et al. teaches wherein a filter has an antistatic electricity characteristic (abstract, problem to be solved), wherein the filter includes a porous layer made of a fluororesin (fig. 1, #3), and a gas-permeable reinforcing layer (fig. 1, #1), which is provided on a surface of the porous layer, wherein the reinforcing layer is made of a non-woven fabric which consists of any one or a plurality of materials selected from polyethylene, polyethyleneterephthalate, nylon,

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polyester, and polyamide (paragraph 11), and wherein the filter includes a predetermined reference material (fig. 1, #1) other than a target material to be collected.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the system of Fischer as modified above with the filter of Imai et al., since one would be motivated to make such a modification for higher collecting efficiency (abstract, problem to be solved) as shown by Imai et al.

Also note that the functional recitation of a filter enabling a calibration of a particulate matter analyzer processing the collected target material on the filter has not been given patentable weight because it is narrative in form.

18. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer, Volkwein et al., and Thomson et al. as applied to claim 14 above, and further in view of Wedding (US Patent 5317930).

Fischer as modified above suggests a system as recited above.

However, Fischer fails to disclose units within a same housing at a same location within a housing.

Wedding teaches units within a same housing at a same location within a housing (fig. 5, housing of #150).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the system of Fischer as modified above with the housing of Wedding, since one would be motivated to make such a modification for better protection (fig. 5) as implied from Wedding.

Furthermore, it would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the system of Fischer as modified above with units in a same location, since rearranging parts of an invention only involves routine skill in the art. One would be motivated to make such a modification to make the device more compact.

19. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer, Volkwein et al., and Thomson et al. as applied to claim 14 above, and further in view of Wadsworth et al. (US Patent 4375718).

Fischer as modified above suggests a system as recited above.

However, Fischer fails to disclose wherein a filter member includes a non-woven cloth low in hygroscopicity, and wherein the non-woven cloth consists of one of polyethylene, polyethyleneterephthalate, nylon, polyester, and polyamide.

Wadsworth et al. teaches wherein a filter member includes a non-woven cloth (col. 3, lines 20-25) low in hygroscopicity (col. 3, line 9), and wherein the non-woven cloth consists of one of polyethylene, polyethyleneterephthalate, nylon, polyester, and polyamide (col. 3, lines 11-12).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the system of Fischer as modified above with the filter material of Wadsworth et al., since it is within the general skill of a worker in the art to select a known material on the basis of its suitability. One would be motivated to make such a modification for better trapping of particles (col. 2, line 67, to col. 3, line 25) as implied from Wadsworth et al.

20. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer, Volkwein et al., and Thomson et al. as applied to claim 14 above, and further in view of Hanson et al. (US Patent 3744297).

Fischer as modified above suggests a system as recited above.

However, Fischer fails to disclose a filter including a porous layer of a glass fiber, a reinforcing layer, and a predetermined reference material other than a target material to be collected.

Hanson et al. teaches a filter (fig. 1, #14a) including a porous layer of a glass fiber, a reinforcing layer, and a predetermined reference material (col. 2, lines 42-43) other than a target material to be collected.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the system of Fischer as modified above with the filter material of Hanson et al., since it is within the general skill of a worker in the art to select a known material on the basis of its suitability (col. 2, lines 42-46) as shown by Hanson et al. One would be motivated to make such a modification based on ease of procurement (col. 2, lines 42-6) as implied from Hanson et al.

Also note that the functional recitation of a filter enabling a reference comparison when a collected particulate matter on one of the filter members is subjected to an analysis to determine quantity of a target material has not been given patentable weight because it is narrative in form.

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Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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